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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,725	09/29/2003	Ayumu Murakami	02910.000091.	6720
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EXAMINER				
SARPONG, AKWASI				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/671,725

Applicant(s)

MURAKAMI, AYUMU

Examiner

AKWASI M. SARPONG

Art Unit

2625

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01/11/2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,5,6,8,10 and 13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5,6,8,10 and 13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 08/26/2008 and 11/26/2003
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 01/11/2010 has been entered.

Claim Rejections - 35 USC § 112

2. Regarding claims 1 and 13, the phrase "Configured to " renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention.
3. Claims 2,5-6,8,10 are also rejected under 35 USC 112 since they depend on claims 1 and 13.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-2, 5, 8,10, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masuda et al (US 6628431 B1) in view of Huang (7310171).

Claim 1, Masuda discloses an image reading apparatus (**fig. 1**) comprising an original placement portion (**Original Bed-11**) on which an original is to be placed; (**Col. 1 Lines 25-30, Fig. 18A El 161, thus the original bed is used as a placement bed**) an optical unit (**read unit 2 in Fig. 1**) provided below the original placement portion (**Fig. 1 shows clearly that read unit 2 is below original bed 11**) and configured to move relative to the original placement portion; (**Col. 1 Lines 25-33, thus the read unit moves relatively or along side with the flatbed scanner**).

a guide member (**guide rail-12 shown in fig. 4A**) that guides movement of the optical unit (**Col. 6 Lines 20-30, Fig 4A, Elem. 12 thus guide rail-12 guides optical means-2 during a scanning operation**).

wherein the optical unit (**reading unit 2 shown in Fig. 2A**) includes a unit frame configured to hold an optical element, (**Col. 7 lines 40-45-Contact member 22a holds read unit 2**) and includes a slider configured to slide on the guide member (**Col. 7 lines 43-46-contact member 22a has a shaft that slides as the reading unit 2 moves**)

Masuda does not disclose that said slider having a screw that is vertically threaded in a hole formed in the unit frame and that rides the guide member, a vertical position of the unit frame relative to the guide member is adjusted in accordance with a rotating amount of the screw, a plurality of projecting portions are provided on a root of a thread of the screw along a circumference of the thread, and are provided in an area other than a tip end area of the screw, and each of the projecting

portions of the screw are plastically deformable and screwed into the screw hole while being plastically deformed.

Huang discloses wherein a screw is vertically threaded in a hole formed in a unit frame and carrier chassis 310. **(Col. 3 lines 66- 67 and Col. 4 line 1- thus screw 330 is vertically screws into hole 312 to hold carrier chassis 310)**

a vertical position of the unit frame relative to the carrier chassis is adjusted in accordance with a rotating amount of the screw. **(Col. 3 lines 64-66- Fig. 3 as the screw is rotated the vertical distance between 340 and 310b is also adjusted)**

a plurality of projecting portions are provided on a root of a thread of the screw along a circumference of the thread, **(Fig. 5a shows a projecting portions of the screw along a circumference thread which enters the latching structure 320)**

and are provided in an area other than a tip end area of the screw, **(please see that the tip end of screw 330 in Fig. 5a and 5b is not provided with the portion since it is different)** and each of the projecting portions of the screw are plastically deformable and screwed into the screw hole while being plastically deformed. **(Col. 3 lines 65-67- thus since screw 330 is a fastener and also engages carrier 310 and latching structure 320 proves that when the main tip portion of the screw gets screwed into structure 320 plastically deform structure 320)** Therefore it will be obvious to one ordinary skilled in the art at the time the invention was made to modify Masuda's optical unit in the flatbed scanner to include the teaching of using a screw as a fastener to hold things together and to be used to adjust the vertical position of the

units so that it will prevent skews during scanning. The motivation is using screws enhance stability during scanning which will output better image.

(NB: The projecting part of the screw is the part that is screwed into the objects that the screw is supposed to hold or fasten together. Fig. 5A in Hang shows that portion of the screw.

Claim 2, Masuda in view of Huang further discloses wherein play between the screw portion and the screw hole portion is substantially eliminated by plastic deformation of said screw portion. **(Huang: fig. 5A shows that as screw 330 is screwed into structure 320 the gap between screw 330 and structure 320 becomes deformable)** Therefore it will be obvious to one ordinary skilled in the art at the time the invention was made to modify Masuda's optical unit in the flatbed scanner to include the teaching of using a screw as a fastener to hold things together. this will enhance a better output image.

Claim 3,-Cancelled

Claim 4- Cancelled

Claim 5, Masuda **(Masuda: Column 6, Lines 22-29)** in view of Huang further discloses wherein the tip end of the screw has an engagement portion to which a rotating tool is to engage. **(Huang: please see that the tip end of screw 330 in Fig. 5a and 5b is not provided with the portion since it is different)**

Claim 7, - (Cancelled)

Claim 8, Masuda discloses wherein a plurality of contact members (El. 153 in Fig. 18B) that are provided at respective end portions of said optical unit (**read 152 shown in Fig. 18B**) with respect to a direction orthogonal to a moving direction of the optical member respectively. (**Col. 1 lines 35-40, Fig. 18B- looking at Fig. 18B the read unit scans by moving on the reference shaft 171 and clearly the contact member 153 is orthogonal to the movement of the read unit 152**)

Masuda does not disclose wherein a plurality of screws are provided at the end portions of said read unit 152.

However Huang discloses a screw 330 used to hold carrier Chasis 310 and latching structure 320. therefore it will be obvious to one ordinary skilled in the art at the time the invention was made to replace the contact member 153 of masuda with screw 330 so the there will not any movement during scanning . This will prevent distortion during scanning.

(NB. Understand that since it is known that screws can be used as fasteners from the modification of Masuda in view of Huang, one skilled in the art can add more screws and holes and therefore obviously a plurality of screws can be used).

Claim 9, - (Cancelled)

Claim 10, Masuda (Col. 3 Lines 45-60, Fig. 23) in view of Huang discloses an illuminating unit **(the optical unit 369 shown in Fig. 23)** configured to illuminate the original on the original placement portion, wherein the optical element **(Masuda: Fig. 23 El. 369)** has a mirror **(Masuda: Fig. 23 El. 366)** configured to reflect a reflection light from the original that is illuminated with the illuminating unit **(Masuda: Fig. 23 El. 369)**.

Claim 11, -Cancelled

Claim 12, -(Cancelled).

Claim 13, Masuda discloses an image reading apparatus **(reading Unit 2 shown in Fig. 2A)** comprising:

an original illumination member; **(Fig. 23 El. 369)**

a reflection system configured to reflect light from the original **(Col. 1 Lines 29-30, Fig 18, El. or reflecting mirror 176- thus the reflecting mirror reflects the lights from the original to the optical unit) ;**

a scanning member **(Fig. 18, El. 152 or read unit 152)** configured to move the reflection system; a supporting surface configured to support the scanning member; **(Col. 1 lines 33-40, thus the read unit 152 moves along the scanning direction as it reads the original document)**

and

Masuda does not disclose a plurality of screws configured to be mounted in a plurality of screw holes formed on the scanning member, wherein a head of each of the screws slides in contact with the surface;

wherein a vertical position of the scanning member relative to the supporting surface is adjusted in accordance with a rotating amount of the screw; and

wherein each of the screws has a plurality of plastically deformable projecting portions on a root of a thread thereof along a circumference of the thread, the projecting portions provided in an area other than a tip end area of the screw, and the projecting

a screw configured to be mounted in a holes formed on the scanning member, **(fig. 5A, Carrier Chassis 310 is the scanning member)** wherein a head of each of the screws slides in contact with the surface; **(Col. 3 lines 66- 67 and Col. 4 line 1- thus screw 330 is vertically screws into hole 312 to hold carrier chassis 310).**

(NB. Understand that since it is known that screws can be used as fasteners, one skilled in the art can add more screws and therefore holes as well and therefore obviously a plurality of screws can be used).

wherein a vertical position of the scanning member **(fig. 5A, Carrier Chassis 310 is the scanning member)** relative to the supporting surface is adjusted in accordance with a rotating amount of the screw; **(Col. 3 lines 64-66- Fig. 3 as the screw is rotated the vertical distance between 340 and 310b is also adjusted)**

and

wherein each of the screws has a plurality of plastically deformable projecting portions on a root of a thread thereof along a circumference of the thread, **(Fig. 5a shows a projecting portions of the screw along a circumference thread which enters the latching structure 320)** the projecting portions provided in an area other than a tip end area of the screw, **(please see that the tip end of screw 330 in Fig. 5a and 5b is not provided with the portion since it is different)** and the projecting portions and the screw hole engage each other in an interference fit in the axial direction of the screw. **(Col. 3 lines 65-67- thus since screw 330 is a fastener and also engages carrier 310 and latching structure 320 proves that when the main tip portion of the screw gets screwed into structure 320 plastically deform structure 320).** Therefore it will be obvious to one ordinary skilled in the art at the time the invention was made to modify Masuda's optical unit in the flatbed scanner to include the teaching of using a screw as a fastener to hold things together and to be used to adjust the vertical position of the units so that it will prevent skews during scanning. The motivation is using screws enhance stability during scanning which will output better image.

(NB: The projecting part of the screw is the part that is screwed into the objects that the screw is supposed to hold or fasten together. Fig. 5A in Hang shows that portion of the screw.

4. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Masuda et al (US 6628431 B1) in view of Huang (7310171) and further in view of Taniguchi (6702469) .

Claim 6, Masuda in view of huang does not disclose wherein the screw is made of a resin material.

However Taniguchi teaches a screw that is made of resin material. (**Col. 11 lines 60-64- thus male screw 40 and 41 are made of resin material**). Therefore it will be obvious to one ordinary skilled in the art at the time the invention was made to modify the screw disclosed by Huang and Masuda as discussed previously to be made with resin material. One skilled in the art will be motivated to do this because resin material prevents molding such as galling.

Response to applicant's Remark

The remarks filed by the applicant on 08/13/2009 has been considered but was not persuasive.

Regarding Amended claim 1 applicant argues that the cited reference does not disclose where an original is placed for being scanned by a optical unit disposed there below. The optical unit moves on a supporting guide member, and includes a unit frame that holds an optical element. The unit frame includes a slider having a screw that is vertically threaded in a hole formed in the unit frame, wherein that screw rides on the

guide member. A vertical portion of the unit frame, threaded to the guide member, is adjusted according to rotation of the screw, and the screw includes a plurality of projecting portions provided on a root of its threads, wherein the projecting portions are disposed along a circumference of the threads and are plastically deformed when threaded into the hole in the unit frame.

In reply examiner respectfully disagree because as explained in the Office action Masuda discloses an image reading apparatus (**fig. 1**) comprising an original placement portion (**Original Bed-11**) on which an original is to be placed; (**Col. 1 Lines 25-30, Fig. 18A El 161, thus the original bed is used as a placement bed**) an optical unit (**read unit 2 in Fig. 1**) provided below the original placement portion (**Fig. 1 shows clearly that read unit 2 is below original bed 11**) and configured to move relative to the original placement portion; (**Col. 1 Lines 25-33, thus the read unit moves relatively or along side with the flatbed scanner**).

a guide member (**guide rail-12 shown in fig. 4A**) that guides movement of the optical unit (**Col. 6 Lines 20-30, Fig 4A, Elem. 12 thus guide rail-12 guides optical means-2 during a scanning operation**).

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Masuda does not disclose that said slider having a screw that is vertically threaded in a hole formed in the unit frame and that rides the guide member,

a vertical position of the unit frame relative to the guide member is adjusted in accordance with a rotating amount of the screw, a plurality of projecting portions are provided on a root of a thread of the screw along a circumference of the thread, and are provided in an area other than a tip end area of the screw, and each of the projecting portions of the screw are plastically deformable and screwed into the screw hole while being plastically deformed.

Huang discloses wherein a screw is vertically threaded in a hole formed in a unit frame and carrier chassis 310. **(Col. 3 lines 66- 67 and Col. 4 line 1- thus screw 330 is vertically screws into hole 312 to hold carrier chassis 310)**

a vertical position of the unit frame relative to the carrier chassis is adjusted in accordance with a rotating amount of the screw. **(Col. 3 lines 64-66- Fig. 3 as the screw is rotated the vertical distance between 340 and 310b is also adjusted)**

a plurality of projecting portions are provided on a root of a thread of the screw along a circumference of the thread, **(Fig. 5a shows a projecting portions of the screw along a circumference thread which enters the latching structure 320)** and are provided in an area other than a tip end area of the screw, **(please see that the tip end of screw 330 in Fig. 5a and 5b is not provided with the portion since it is different)** and each of the projecting portions of the screw are plastically deformable and screwed into the screw hole while being plastically deformed. **(Col. 3 lines 65-67- thus since screw 330 is a fastener and also engages carrier 310 and latching structure 320 proves that when the main tip portion of the screw gets screwed into structure 320 plastically deform structure 320)** Therefore it will be obvious to

one ordinary skilled in the art at the time the invention was made to modify Masuda's optical unit in the flatbed scanner to include the teaching of using a screw as a fastener to hold things together and to be used to adjust the vertical position of the units so that it will prevent skews during scanning. The motivation is using screws enhance stability during scanning which will output better image.

(NB: The projecting part of the screw is the part that is screwed into the objects that the screw is supposed to hold or fasten together. Fig. 5A in Hang shows that portion of the screw.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, King Poon can be reached on 571-272-7440. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. M. S./

Examiner, Art Unit 2625

/King Y. Poon/

Supervisory Patent Examiner, Art Unit 2625

